

LITERATURE REVIEW

By Fernando Rivadavia

Lowrie, A. 2013. Carnivorous Plants of Australia Magnum Opus - Volumes One, Two, Three. Redfern Natural History Productions Ltd., Poole. 1371 pages; 2573 images.

Allen Lowrie's long awaited 3-volume Magnum Opus (=MO) is an awesome update to his previous 3 volumes on CPs of Australia. However it is not just a new edition of the old information! There are new combinations, new records, new taxonomic states, synonyms re-elevated to species level, new sections, and the description of several new species: 1 *Byblis*, 16 *Drosera*, 1 *Utricularia*, as well as new sundew hybrids.

For me, one of the biggest achievements of MO was the more comprehensive resolution of the *D. indica* complex – which I'd been eagerly awaiting for years. It is now split into 11 beautiful species, 10 of which occur in Australia (type *D. indica* does not, interestingly enough). Now to learn how to distinguish between them all....

Which brings me to what may be my biggest peeve with MO: that the species are found in alphabetical order, instead of grouped by taxonomic affinity (subgenera, sections, etc.). I found myself having to constantly flip back and forth between the 3 volumes in order to compare species in the *D. indica* complex, for example.

And yes, MO may be best described as massive. In fact that may be my second biggest peeve: it's too heavy to hold for very long and needs to be read on a flat surface, instead of resting against your belly while lying in bed before sleep (which is how I do most of my reading for pleasure). It might've been more practical and logical to have split the 3 volumes into 5 or more smaller volumes (for example: one volume just for pygmies, one just for tuberous sundews, etc.).

Considering what a huge piece of work MO is, there were surprisingly few typos that I could find, and even fewer instances of weirdly phrased sentences – which tells us a lot about how careful the editing was. As for overall organization, the 3 volumes are split into several sections, starting with an introduction to the types of CPs and their habitats in Australia, followed by an overview of the different groups of sundews and sundew bugs. Then comes an interesting section with keys to ID all the species, including traditional botanical keys, beautiful pictorial flower keys, and well as a pygmy sundew gemmae key.

After a brief description of the different plant parts used in taxonomy (and a beautiful but too-brief section with SEM images of their seeds, showing only a handful of species), finally the species descriptions begin, almost 200 pages into the first volume. In the usual style of Allen's previous books, each species is treated in 4 pages.

The first page contains a full botanical description, distribution, habitat, flowering period, etymology, affinities, and (my favorite part) notes about when and how each plant was discovered by the author, natural variation, or other curiosities. For species that also occur outside of Australia the distribution is sometimes listed, but other times not, which I found a bit odd.

The second page displays Allen's beautiful line drawings, highlighting important characters for each species. To my vexation, the majority of species were missing drawings of their seed! This was even true for the new species described, and for some species where seed were said to be exceptional in some way (e.g. *D. fulva* and *D. verrucata*, which is even named after its unusual seeds).

The third page shows a nice satellite map, etched with the species' distribution in (but unfortunately not outside) Australia, as well as a key to the beautiful pictures on the fourth page. Although

the majority of pictures on the fourth page are truly gorgeous, I wish there were less close-ups of flowers and more habitat shots or pictures showing the entire plant habit. For example in the *D. petiolaris* group, only *D. caduca* and *D. paradoxa* are shown as entire flowering plants. All the rest are pictured as rosette or flower close-ups only. Flower shots dominate for many of the sundew species (e.g. *D. cucullata*) and in some cases are pretty much all that is shown (e.g. *D. drummondii*). For some species there only seem to be shots in cultivation, unfortunately (e.g. *D. microphylla* and *D. menziesii*).

While reading each species description, I often found myself flipping to page 4 to see pictures of things described on page 1... only to find that they were not properly pictured or not shown at all. Unfortunately this happened a little too often, regarding certain features or oddities like the grey ovaries of *D. hyperostygma*, the club-shaped organ of *D. fragrans*, involute leaf veneration of *D. praeifolia*, flower color forms of *D. spilosa*, horned stamens of *D. fulva*, white form of *U. violacea*, the column-like form of *D. myriantha*, and especially descriptions of mass flowerings or large colonies of certain species.

Finally, after all the *Utricularia* in volume 3, comes a section with a biography for every single author of an Australian CP, whether one or a dozen species were named by that author. Although my initial thoughts were that 81 pages on biographies was a waste of paper in a CP book, I'll admit that I found myself spending much more time than I expected reading the interesting stories behind all those botanists, explorers, and CPers.

Closing the 3 volumes is a taxonomic appendix containing new species descriptions, new sections, new combinations, etc., as well as a nice segment with more information on the *D. indica* complex (including some cool SEM shots of seeds and unfortunately the single picture of type *D. indica* in the whole of MO), 25 pages listing all the species treated in MO (not sure why this was included), a glossary, bibliography, index, as well as a few other bits and pieces for taxonomists (or explaining taxonomy for the lay).

This latter section also included what for me was probably the most "fun" part of the whole MO: 10 pages that teach you how to pronounce all of the species names. Even without the help of any stimulants, I had a long laugh attack trying to vocalize all of the Latin names with an Australian twang.

Cultivators often complain about the constant change in plant names, and there is plenty of it in MO. But this is inevitable since taxonomy is always in flux as new species are discovered, old species re-evaluated, and old synonyms have to be brought back from the grave. Many people don't realize that botanists spend a lot of time studying dried herbarium specimens, sometimes centuries old, many times highly fragmented, and often missing important parts.

Numerous pictures of old (and very important) herbarium specimens are presented in MO. On page 63 of volume I, Allen shows one particularly important specimen, the type of *D. petiolaris* from Queensland. This was collected in 1770, on Captain Cook's first expedition to Australia, and if I'm not mistaken it was the first sundew ever collected on that continent by Europeans. Although Allen wrote that he obtained this historical collection on loan from the British Museum in 1994, I can say that it was actually in 1993, since I happened to be visiting Allen in July of that year and clearly remember seeing it. Unbeknownst to Allen, it had a huge impact on me, bigger than any live plant I saw in Western Australia on that trip. I was 21 and had only begun studying CPs in the wilds of Brazil 3 years before. Botany and taxonomy were still very new concepts in my mind. I remember being awed at the excellent quality of that *D. petiolaris* herbarium sheet, at how intact the plants were, as if they'd been pressed very recently – even though the collection was over 200 years old. The reason why I remember this so clearly is because that was the moment that the historical importance of herbarium specimens finally dawned on me. Until then, I'd been hesitant to press plants in the field,

not wanting to kill beautiful sundews. But the *D. petiolaris* type specimen made me realize what an important and long-lasting snapshot of nature herbarium specimens represent. Reading page 63 of MO sent new chills down my spine.

In conclusion, I must address the most common criticism I hear regarding Allen's numerous publications, including MO: that he is a splitter. Yes, of course there are numerous cases where taxonomic rank can be (and has been) hotly debated when it comes to Allen's species. In MO there are many such examples where species rank is tenuous at best (*D. depauperata* vs. *D. pulchella*, *D. pygmaea* vs. *D. micra*, *D. macrophylla* vs. *D. monantha*, and several others), and yet *D. binata* was not split into the multiple taxa that it maybe deserves to be, and *D. spatulata* var. *gympiensis* was not recognized, when it could easily have been given species status.

There is no doubt that Allen is truly a splitter, but is that really a bad thing? I think it is the duty of all field researchers to study and publish all known natural variation, in the hopes that biodiversity can be preserved wherever it exists. Splitters are thus important in that they raise red flags for the environmentalists and other taxonomists, who can then probe deeper with further studies. Follow-up research will almost inevitably change taxonomic ranks one way or another, sometimes flipping multiple times over decades and centuries. However I don't fret too much about what the exact taxonomic rank of a taxon "should" be, knowing that species concepts are not only varied but also always in flux. Taxonomic changes should not be viewed as something bad and wasteful, but as a productive and increasing accumulation of scientific knowledge.

And that is how I view Allen's MO: as a treasure trove of knowledge about the fantastic CP biodiversity on the Australian continent that every CP lover should own. A definitive work? Quite the contrary, it is already outdated! Several new and unpublished taxa are mentioned in MO and a few new *Utricularia* recently published by Richard Jobson did not make the cut. Therefore, I am ecstatic to have these 3 massive volumes in hands to pour over all those beautiful species for now, but I look forward to buying revised editions of MO every 5–10 years for as long as Allen lives.

Art inspired by Pitcher Plants in:

Ceramic, Watercolor on Antique Ledger Paper
Ceramic & Glass Tiles, Giclee Prints

Contact us for a catalog of available artworks.
Commissions welcomed!
Pricing upon request.

sharonbladholm@sbcglobal.net
www.sharonbladholm.com
Ph. 773 638-3500

